

جمهورية مصر العربية



وزارة التربية والتعليم
والعالم الفنى

نموذج إجابة

امتحان شهادة إتمام الدراسة الثانوية العامة

للعام الدراسى ٢٠١٧/٢٠١٦ - الدور الأول

المادة : الاحصاء (باللغة الانجليزية)

نموذج

أ

1-

(d) $P(S)$ $\triangle 1$

2-

(c) 0.8 $\triangle 1$

3-

Let the event of selection a white ball is denoted by A

Let the event of selection a red ball is denoted by B

$$P(A) = \frac{15}{25} \triangle \frac{1}{2}, P(B) = \frac{14}{24} \triangle \frac{1}{2}$$

$$(a) P(A \cap B) = P(A) \times P(B) \triangle \frac{1}{2} = \frac{15}{25} \times \frac{14}{24} = \frac{7}{20} \triangle \frac{1}{2}$$

$$(b) P(B|A) = \frac{P(A \cap B)}{P(A)} = \frac{\frac{7}{20}}{\frac{15}{25}} = \frac{7}{12} \triangle \frac{1}{2}$$

$$(c) P(A|B) = \frac{P(A \cap B)}{P(B)} = \frac{\frac{7}{20}}{\frac{14}{24}} = \frac{3}{5} \triangle \frac{1}{2}$$

4-

(d) inverse $\triangle 1$

5-

(b) 14.1



6-

$$\text{First: } P(x > \mu - 1.5 \sigma) = P(z > \frac{\mu - 1.5 \sigma - \mu}{\sigma}) = P(z > -1.5)$$

$$= 0.5 + P(0 \leq z \leq 1.5)$$

$$= 0.5 - 0.4332 = 0.9332$$

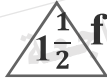
$$\text{Second: } P(\mu - 1.96 \sigma < x < \mu + 1.96 \sigma)$$

$$= P(-1.96 < z < 1.96)$$

$$= 2 P(0 \leq z \leq 1.96)$$

$$= 2 \times 0.4750 = 0.9500$$

7-



for the table

x	y	Rank of x	Rank of x	d	d^2
600	30	1	7	-6	36
1500	24	4.5	4.5	0	0
1400	24	3	4.5	-1.5	2.25
700	25	2	6	-4	16
2000	20	6	1.5	4.5	20.25
2500	20	7	1.5	5.5	30.25
1500	23	4.5	3	1.5	2.25
					107

$$r = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

$$r = 1 - \frac{6 \times 107}{7(49 - 1)}$$

$$r = -0.91$$

(Inverse correlation)

8-

(a) 0.6 

9-

(C) 1.5 

10-

(b) 1 

11-

First: $\sum f(x_r) = 1$

$$0.4 + a + 0.1 + 0.1 + 0.1 = 1$$

$$a = 0.3$$

Second: The expectation $\mu = \sum_{r=1}^n [x_r \times f(x_r)]$

$$\mu = 0 \times 0.4 + 1 \times 0.3 + 2 \times 0.1 + 3 \times 0.1 + 4 \times 0.1$$

$$\mu = 1.2$$

The variance $\sigma^2 = \sum_{r=1}^n [x_r^2 \times f(x_r)] - \mu^2$

$$\sigma^2 = [0 \times 0.4 + 1 \times 0.3 + 4 \times 0.1 + 9 \times 0.1 + 16 \times 0.1] - 1.2^2$$

$$\sigma^2 = \frac{44}{25}$$

The standard deviation $\sigma = 1.33$

12-

First: $P(0 \leq x \leq 2) = 1$

$$\frac{f(0)+f(2)}{2} (2-0) = 1$$

$$\frac{1}{2} \times \left(\frac{a}{4} + \frac{2+a}{4} \right) \times 2 = 1$$

$$\frac{a}{4} + \frac{3}{4} = 1$$

$$\Rightarrow$$

$$\frac{a}{4} = \frac{1}{4}$$

$$\Rightarrow$$

$$a = 1$$

Second : $P\left(\frac{1}{2} \leq x \leq \frac{3}{2}\right) = \frac{f(0.5)+f(1.5)}{2} \times (1.5 - 0.5)$

$$= \frac{1}{2} \left[\frac{3}{8} + \frac{5}{8} \right] \times 1 = \frac{1}{2}$$

13-

$$(a) \quad r = \frac{n \sum xy - \sum x \sum y}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

$$= \frac{8 \times 364 - 56 \times 40}{\sqrt{[8 \times 524 - (56)^2][8 \times 256 - (40)^2]}}$$

$$= 0.98 \quad \left(\frac{1}{2}\right) \quad \text{(Direct correlation)} \quad \left(\frac{1}{2}\right)$$

$$(b) \quad \hat{Y} = a + bX$$

$$b = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2}$$

$$= \frac{8 \times 364 - 56 \times 40}{8 \times 524 - (56)^2}$$

$$= \frac{7}{11} \quad \left(\frac{1}{2}\right)$$

$$a = \frac{\sum y - b \sum x}{n}$$

$$= \frac{40 - \frac{7}{11} \times 56}{8} = \frac{6}{11} \quad \left(\frac{1}{2}\right)$$

$$\hat{Y} = \frac{6}{11} + \frac{7}{11} X \quad \left(\frac{1}{2}\right)$$

انتهت الإجابة وتراعى الحلول الأخرى